

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Grand Glaize Creek

Water Body Segment at a Glance:

County: St. Louis
Nearby Cities: St. Louis
Length of impaired segment: 4 miles
Pollutants: Bacteria, Chloride
Source: Urban Nonpoint Sources
Water Body ID: 2184



Note: See also the Mercury Information Sheet

Scheduled for TMDL development: 2011

Description of the Problem

Beneficial uses of Grand Glaize Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Uses that are impaired

- Protection of Warm Water Aquatic Life
- Whole Body Contact Recreation – Category B

Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E.coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.
- The criteria for chloride are found in 10 CSR 20-7.031 Table A. The chronic criterion is 230 milligrams per liter (mg/L or parts per million) and the acute criterion is 860 mg/L.

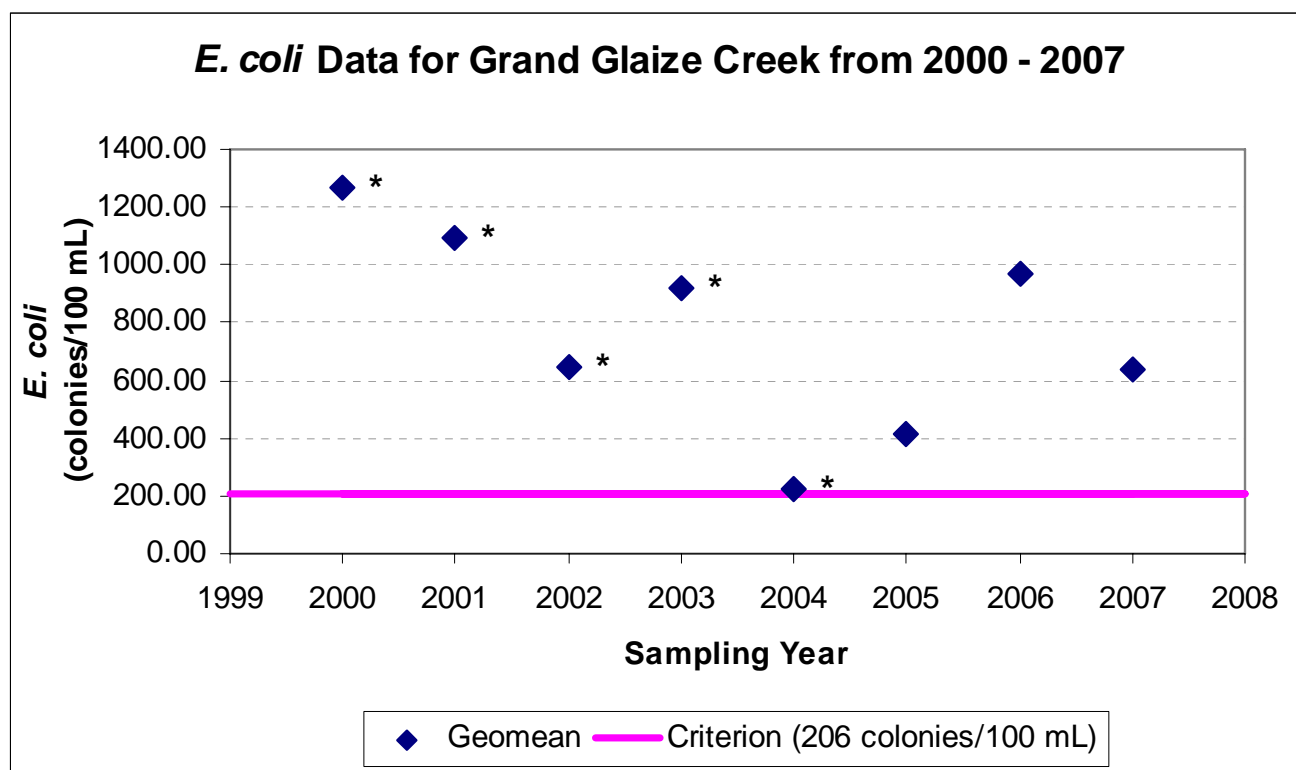
Background information and water quality data

Grand Glaize Creek is an urban water body that winds around in southern St. Louis, Mo., before flowing into the Meramec River. It is designated as Category B for the whole body contact recreation use, which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands or inaccessible to the public. Evidence of impairment is from data gathered by the U.S. Geological Survey from 2001-07. The listing methodology states that, to be considered not impaired, a water body must meet the water quality criterion in each of the last three years of available data and that the geometric mean must consist of at least five data points within the recreational season. In

Grand Glaize Creek, the recreational season geometric mean exceeded the criteria of 206 col/100 mL for Category B in 2005, 2006 and 2007.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli*, are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine^{1,2}. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.



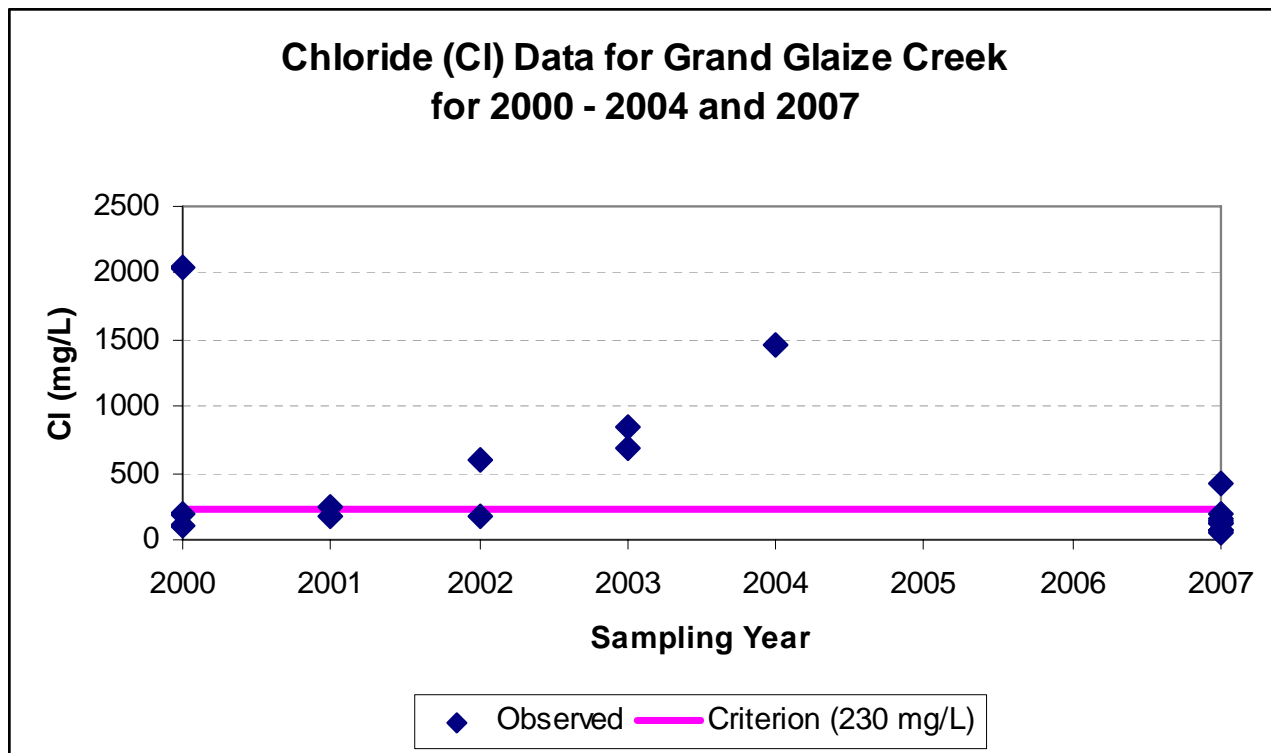
Geomean calculated using fewer than five (5) samples.

Evidence for the chloride impairment is also from USGS data. The Listing Methodology stipulates that only one exceedance of the chloride criteria in the last three years of available data is necessary to

¹ Hudault S, Guignot J, Servin AL (July 2001). "[Escherichia coli strains colonising the gastrointestinal tract protect germfree mice against Salmonella typhimurium infection](#)". *Gut* **49** (1): 47–55

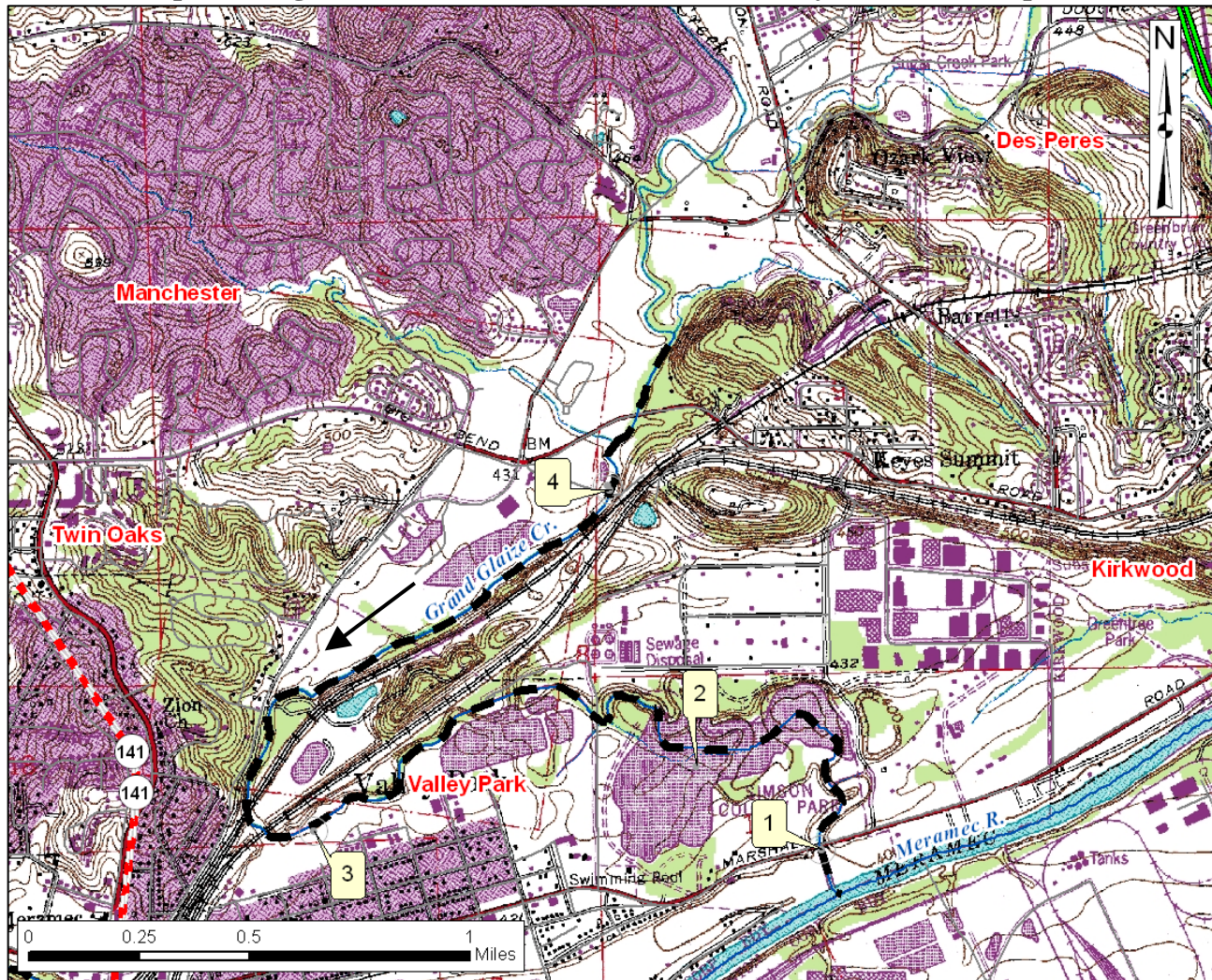
² Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?". *Trends Microbiol.* **9** (9): 424–8.

constitute an impairment. Four samples from the last three years for which there is data (2007, 2004 and 2003) exceeded the chronic criterion.



A map showing Grand Glaize Creek and the sampling sites may be found on the next page

Map Showing Grand Glaize Creek in St. Louis County, Mo., and Sample Sites



--- Impaired Segment

← Direction of flow

Sample Sites

- 1 – Grand Glaize Creek at Marshall Road
- 2 – Simpson Park Lake (Grand Glaize Creek)
- 3 – Grand Glaize Creek at Lenord Park
- 4 – Grand Glaize Creek at Quinette Road

For more information call or write:

Missouri Department of Natural Resources
Water Protection Program

P.O. Box 176, Jefferson City, MO 65102-0176

1-800-361-4827 or 573-751-1300 office

573-522-9920 fax

Program Home Page: www.dnr.mo.gov/env/wpp/index.html